

WHAT IS CLAIMED IS:

1. A design-check system that checks electrical characteristics of CAD layout data for a printed circuit board, and comprising:

a storage means that stores position-specification conditions that specify
5 a position from said CAD layout data where there is a possibility that poor electrical characteristics will occur due to an influence of CAD layout, characteristic-parameter items to be extracted, and correction-determination standards that are standards for determining whether or not it is necessary to correct said CAD layout data, which are correlated and registered in a
10 database for each predicted cause of poor electrical characteristics;

a position-specification means that specifies the position from said CAD layout data based on said position-specification conditions;

a characteristic-parameter-extraction means that is operable to extract said characteristic parameters based at said specified position; and

15 a correction-determination means that to determines whether or not it is necessary to correct said CAD layout data by comparing the characteristic parameters extracted by said characteristic-parameter-extraction means and said correction-determination standards that correspond to the characteristic parameters read from said storage means.

20 2. The design-check system of claim 1 comprising a client apparatus to which said CAD layout data is input, and a server apparatus that is connected with said client apparatus via a network, wherein:

said server apparatus comprises said storage means, said position-specification means, said characteristic-parameter-extraction means, and said
25 correction-determination means; and

said client apparatus acquires said determination result via said network.

3. The design-check system of claim 1 comprising a client apparatus to
30 which said CAD layout data is input, and a server apparatus that is connected

with the client apparatus via a network, wherein:

said client apparatus comprises said position-specification means and said characteristic-parameter-extraction means and sends the extracted characteristic parameters to said server apparatus; and

5 said server apparatus comprises said storage means and said correction-determination means and sends said determination result to said client apparatus.

4. The design-check system of claim 3 wherein:

10 said client apparatus acquires said position-specification means and characteristic-parameter-extraction means from said server apparatus via said network when it is necessary.

5. The design-check system of claim 1 comprising a client apparatus to
15 which said CAD layout data is input, and a server apparatus that is connected with the client apparatus via a network, wherein:

said client apparatus comprises said position-specification means, said characteristic-parameter-extraction means, and said correction-determination means and performs determination based on said correction-determination
20 standards that are stored in said storage means of said server apparatus.

6. The design-check system of claim 5 wherein:

said client apparatus acquires said position-specification means, said characteristic-parameter-extraction means, and said correction-determination
25 means from said server apparatus via said network when it is necessary.

7. The design-check system of claims 2 to 6 wherein:

said server apparatus further comprises a billing means that performs billing according to access of said database from said client apparatus.

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8. The design-check system of claims 2 to 6 wherein said client apparatus further comprises a selection means that is operable to display detail information related to errors registered in said database when said correction-determination means determines that it is necessary to correct the CAD layout data.

9. The design-check system of claims 2 to 6 wherein said server apparatus further comprises:

a second storage means that collects the characteristic parameters extracted from said CAD layout data;

a statistics-calculation means that calculates statistical values for the collected characteristic parameters; and

said server apparatus sends those statistical values to said client apparatus.

10. The design-check system of claims 2 to 6 wherein, when circuit-design data is input instead of said CAD layout data, said position-specification means specifies the position from said circuit-design data based on position-specification conditions that can specify the position with just said circuit-design data, and said server apparatus sends information related to a layout design that corresponds to those position-specification conditions that are registered in said database to the client apparatus.

11. A server apparatus that is used in a design-check system and checks the electrical characteristics of CAD layout data for a printed circuit board that is input from a client apparatus that is connected via a network, and sends the check result to said client apparatus, and comprises:

a storage means that stores position-specification conditions that specify a position from said CAD layout data where there is a possibility that poor electrical characteristics will occur due to an influence of the CAD layout,

characteristic-parameter items to be extracted at the specified position, and correction-determination standards that are standards for determining whether or not it is necessary to correct the CAD layout data, which are correlated and registered in a database for each predicted cause of the poor electrical characteristics; and

a correction-determination means that receives the characteristic parameters that were extracted by the client apparatus for a position specified from the input CAD layout data based on said position-specification conditions, and determines whether or not it is necessary to correct the CAD layout by comparing the characteristic parameters with correction-determination standards that correspond to the characteristic parameters read from said storage means, and then sends the determination result to said client apparatus.

12. A client apparatus that is used in a design-check system and that sends CAD layout data for a printed circuit board to a server apparatus via a network, and receives the check result of a check of the electrical characteristics performed by that server apparatus, and comprising:

a position-specification means that specifies a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of CAD layout; and

a characteristic-parameter-extraction means that extracts characteristic parameters at said specified position, and sends those characteristic parameters to said server apparatus.

13. A program that is used in a design-check system that checks that electrical characteristics of CAD layout data for a printed circuit board, and comprising:

a step of specifying a position from said CAD layout data based on

position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of the CAD layout;

a step of extracting characteristic parameters at the specified position;

5 a step of reading said correction-determination standards, which correspond to the characteristic parameters extracted from said CAD layout data, from the database in which said position-specification conditions, characteristic-parameter items to be extracted, and correction-determination standards, which are standards for determining whether or not it is necessary
10 to correct the CAD layout data, are correlated and registered in a database for each predicted cause of poor electrical characteristics; and

a step of determining whether or not it is necessary to correct the CAD layout data by comparing the characteristic parameters extracted from said CAD layout data with the correction-determination standards that are read
15 from said database.

14. The program of claim 13 that causes a client apparatus to execute the step of specifying said position, step of extracting said characteristic parameters, and step of sending the extracted characteristic parameters to the
20 server apparatus; and causes said server apparatus to execute the step of reading said correction-determination standards, and the step of determining whether or not said correction is necessary.

15. The program of claim 14 that causes said client apparatus, instead of
25 said server apparatus, to execute the step of determining whether or not said correction is necessary.

16. A design-check method that checks electrical characteristics of CAD layout data for a printed circuit board, and comprising:

30 a step of specifying a position from said CAD layout data based on

position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of the CAD layout;

a step of extracting characteristic parameters at the specified position;

5 a step of reading correction-determination standards, which correspond to the characteristic parameters extracted from said CAD layout data, from the database in which said position-specification conditions, characteristic-parameter items to be extracted, and said correction-determination standards, which are standards for determining whether or not it is necessary to correct
10 the CAD layout data, are correlated and registered for each predicted cause of poor electrical characteristics; and

a step of determining whether or not it is necessary to correct the CAD layout by comparing the characteristic parameters extracted from said CAD layout data, and the correction-determination standards that are read from
15 said database.

17. A design-check method whereby a server apparatus checks electrical characteristics of CAD layout data for a printed circuit board input from a client apparatus that is connected via a network, and comprising:

20 a step of specifying a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of poor electrical characteristics due to an influence of CAD layout;

a step of extracting characteristic parameters at the specified position;

a step of sending the extracted characteristic parameters to a server
25 apparatus;

a step wherein said server apparatus reads correction-determination standards that correspond to said characteristic parameters from the database in which said position-specification conditions, characteristic-parameter items to be extracted, and correction-determination standards, which are standards
30 for determining whether or not it is necessary to correct the CAD layout data,

are correlated and registered;

a step wherein said server apparatus compares said received characteristic parameters and correction-determination standards read from said database, and determines whether or not it is necessary to correct the CAD layout data; and

a step of sending said determination result to said client apparatus.

18. The design-check method of claim 17 further comprising a step wherein, before executing the step of specifying said position, said client apparatus acquires a program from said server apparatus that causes said client apparatus to execute the step of specifying said position and the step of extracting said characteristic parameters.

19. The design-check method of claim 18 further comprising a step wherein, before executing said step of determining whether or not said correction is necessary, said client apparatus acquires a program from said server apparatus that causes said client apparatus to execute the step of determining whether or not said correction is necessary.